

As might be expected, the species increases progressively in size with amelioration of the habitat, so that var. *genuinus* is the most reduced, and the var. *palmatus* averages the largest. *P. speciosus*, of the Pacific coastal states, has the leaves a little less deeply lobed, on the average, than do the ordinary forms of the transcontinental *P. palmatus*, but the differences are slight and inconstant, and many specimens are quite indistinguishable.

More collections are needed before the precise limits of range of each variety may be defined. In general, the var. *genuinus* is the most boreal of the three, and the only circumpolar one. It is known to extend south in the high mountains to Washington. The var. *corymbosus* is found through much of the American range of var. *genuinus*, but extends farther south, reaching Gaspé, Que., Mich., and Minn. The var. *palmatus* is the most southern of the three, extending as far as Mass., on the east coast, and Calif., on the west.

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AMELANCHIER SPICATA NOT AN AMERICAN SPECIES

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(Plates 1027–1030)

The name *Amelanchier spicata* (Lam.) K. Koch has dodged in and out of American treatments of the genus but was supposed to have been finally dismissed by Wiegand in his critical studies of the genus, when he wrote in RHODORA, xiv. 123 (1912):

Those who have seen these specimens and the type specimen of *Crataegus spicata* [of Lamarck, basis of *A. spicata*], as well as specimens of our Eastern American stoloniferous fine-toothed *Amelanchier* agree that they all appear to be one and the same thing. Flowers and leaves in the exsiccatae match those of this stoloniferous species as well as one could wish, as do also the flowers and leaves in the original descriptions. The original description of *C. spicata*, however, gives the height of the plant as from two to three times that of the native European species of *Amelanchier*, which, figured out, would mean about 2–5 m. [$6\frac{3}{4}$ – $16\frac{9}{10}$ feet]. Willdenow gives the height as 2–2.5 m. In addition, Mr. Alfred Rehder has stated to the writer that the plant in European gardens commonly passing under the name *A. ovalis* [*A. ovalis* sensu Borkh., equaling *A. spicata*, not *A. ovalis* Medicus, the native European species] is not low and stoloniferous but tall and fastigate.

Wiegand considered that *Amelanchier spicata* was "of hybrid origin" and, believing the European tradition that it came from Canada, he guessed that it might have been a hybrid of the tall and fastigate or arborescent *A. canadensis* (L.) Medic. (*A. oblongifolia* (T. & G.) Roemer) and the freely stoloniferous and colonial dwarf *A. stolonifera* Wiegand. The latter conjecture seems not well supported by the detailed characters of *A. spicata*, as shown by the photograph of the type taken by Professor Alfred Rehder, reproductions, $\times 1$, of which are shown in our PLATE 1027, and the tall fastigate habit sufficiently demonstrates that *A. spicata* has nothing, except generically, to do with the low and freely stoloniferous and loosely colonial shrubs of eastern North America.

In spite of this conclusive evidence from those who have long known the importance of such characters in the genus, the name *Amelanchier spicata* (Lam.) K. Koch suddenly pops up again¹ as indubitably belonging to three low ("0.3-2 m. tall") native North American "surculose colonial shrubs", *A. stolonifera* and *humilis* Wiegand and *A. austromontana* Ashe. Since this interpretation by Professor George Neville Jones is so at variance with those of Wiegand and of Rehder, while the photograph of the type of *Crataegus spicata* and Lamarck's original account of it show complete departure in foliage, flowers, fruit and habit from the characters of these three American species, it becomes necessary to check the type and the description of *C. spicata* (our PLATE 1027) with some care.

The aggregate *Amelanchier spicata* sensu G. N. Jones, not of anyone else, is defined, in part, as "Low surculose colonial shrubs 0.3-2 m. tall; . . . lateral veins 7-9 pairs, . . . distantly arranged . . . ; . . . sepals . . . usually recurved from the middle after anthesis". Now, if we examine Professor Rehder's photograph of the type of *Crataegus spicata* (portions shown in our PLATE 1027) it will at once be evident that the lateral veins do not stop at "9 pairs . . . distant", as defined by Jones, but exceed that maximum and, as compared with the really distant lateral veins of *A. stolonifera* (our PLATE 1029, FIGS. 3 and 4, and PLATE 1030, FIG. 2, both from the TYPE) are relatively approxi-

¹ In G. N. Jones, *Am. Species of Amelanchier*, Ill. Biol. Mon. xx. no. 2: 51 (1946). See review in this journal, pp. 129-134.

mate. Similarly, the TYPE of *A. humilis* (see Jones, plate xv) and what Jones takes as an isotype of *A. austromontana* (Jones, plate xvi) have the lateral veins fewer and more distant than in the type of *A. spicata*, besides more elongate blades with more uniformly subacuminate tips. In foliage, then, *A. stolonifera*, *humilis* and *austromontana* are very inadequate matches for the leaves of *A. spicata*. In the type of *A. spicata* (PLATE 1027, FIG. 2) the sepals and petals are erect, not a very convincing match for the "sepals usually recurved from the middle after anthesis" of the three American shrubs (see our PLATE 1029 FIGS. 1 and 2, and 1030, FIG. 1), while in ours the petals diverge. It is to me quite evident from the photograph of the type-specimen of *A. spicata* that in flowers, as well as leaves, it is not any of the American shrubs which Jones identifies with it, he saying (p. 57) "it becomes clearly evident that Lamarck's *Crataegus spicata* is the common and widespread small serviceberry of eastern North America". Wiegand, Rehder and others had already clearly shown that it is not, for the Lamarck shrub is fastigiata and up to 16 or more feet ("—5 m.") high, not a very convincing similarity to "Low surculose colonial shrubs 0.3–2 m. tall."

Lamarck's own account should be convincing:

8. ALISIER à épis, *Crataegus spicata*. *Amelanchier du Canada* à petites fleurs.

Cet arbrisseau a beaucoup de rapport avec le précédent; mais il s'élève deux ou trois fois davantage. Ses feuilles sont pétiolées, arrondies, dentées, vertes en dessus, pâles en dessous, & glabres des deux côtés dans leur parfait développement. Elles sont alors à-peu-près aussi larges que longues, & ont un pouce & demi de diamètre ou environ. Les fleurs sont blanches, petites, & naissent sur des grappes un peu étroites, qui ressemblent à des épis. Ces grappes sont munies de petites bractées linéaires, colorées, caduques, & qui sont plus longues que les pédoncules propres de chaque fleur; ce qui n'a point lieu dans l'espèce précédente. Les pétales sont une fois plus courts que ceux de l'Amélanchier, & ses baies sont une fois plus grosses que les siennes, c'est-à-dire, ont au moins la grosseur des fruits du Prunelier ou Prunier épineux. On prétend que cet arbrisseau se trouve au Canada. On le cultive au Jardin du Roi & dans les jardins des Curieux, ainsi que le suivant. (v. v.)—Lam. Encycl. Meth. i. 84 (1783).

Immediately following this account Lamarck described as *Crataegus racemosa* the American fastigiata shrub or tree which was common in European gardens and which Linnaeus had de-

scribed as *Mespilus canadensis*, the species correctly called *Amelanchier canadensis* (L.) Medic., but known until recently as *A. oblongifolia* (T. & G.) Roemer¹, an American species to which various American students (Robinson, Rehder and others) have sometimes referred shrubs which Jones now places in his heteromorphic "*A. spicata*". If *Crataegus spicata* were, as we are now positively assured, "the common and widespread small service-berry of eastern North America", in which Jones includes elements which others have considered variations of *A. canadensis* (*Crataegus racemosa* Lam.), it is astounding that Lamarck did not suggest the resemblance but distinctly said that his new *C. spicata* "has much the aspect of the preceding, but rising two or three times as high". As to "the preceding", it was the one native European species (our PLATE 1028) of *Amelanchier*, the type of the genus, *Mespilus Amelanchier* L., called by Lamarck *Crataegus rotundifolia* Lam. l. c., the species correctly called *A. ovalis* Medicus but often known as *A. vulgaris* Moench or *A. rotundifolia* (Lam.) Dum.-Cours. Wiegand's figures for the height, 2-5 m. (or up to nearly 17 feet) and Rehder's statement that *A. spicata* is a tall and fastigate shrub, already quoted, do not seem like Jones's "Low, surculose colonial shrubs 0.3-2 m. tall". Altogether the original account by Lamarck gives as little support to the recent misidentification of *A. stolonifera* et al. as *A. spicata* as does the photograph of the type.

Lamarck compared his *Crataegus spicata* only with the one European species, his *Crataegus rotundifolia*, the *Amelanchier ovalis* Medicus, but it was much taller and with larger leaves and fruit, the leaves of *C. rotundifolia* "petites en comparaison de celles des autres espèces". When we examine characteristic material of *A. ovalis* (our PLATE 1028), we note the leaves with outline much as in the type of *A. spicata*, with their veins similarly subapproximate; the sepals and petals erect; and the pedicels and hypanthium densely pilose (FIG. 2). It is difficult to escape the conclusion that *A. spicata* is closely related to the European *A. ovalis*. If it is desired, on account of its much greater height and fastigate development, to consider it of hybrid origin, why not invoke *A. canadensis* (*oblongifolia*), as is done by Wiegand

¹ For detailed study of this identification and for photograph of the type of *Mespilus canadensis* see RHODORA, xliii. 560-563, plate 672, fig. 1 (1941).



Photo B. G. Schubert, after Alfred Rehder

TYPE, $\times 1$, of AMELANCHIER SPICATA (Lam.) K. Koch (*Crataegus spicata* Lam.).